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ARIZONA GRAIN SORGHUM, FORAGE SORGHUM, AND SUDANGRASS PERFORMANCE TESTS

1964

by

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TUCSON

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Seed sources for tests included:

Advance Seed Co.

Asgrow Seed Co. (ASG)[1/]

DeKalb Seed Co.

Frontier Seed Co.

Lindsey Seed Co.

Northrup King & Co. (NK) [1/]

Paymaster Seed Co. (PM)[1/]

Pfister Associated Growers (PAG)[1/]

Pioneer Seed Co.

1/ Abbreviations used in this publication.

INTRODUCTION

In 1964 Arizona grain sorghum reached a record average yield of 69 bushels per acre (Table 1) which was 3% above 1963 and an increase of 18% over the 1958 to 1962 average. The continued increase in the grain and forage production rate from year to year is a tribute to the Arizona grower for his use of improved cultural methods, fertilizers, and hybrid seed. A wide variation in Arizona agricultural environments, caused by a range in altitude from sea level to as high as sorghum will grow and produce (over 6000 feet), makes grower recommendations an interesting challenge.

Table 1

Arizona Crop Acreages and Yields
of Various Sorghum Products in 1964. 1/

Crop	1964 Acreages	1964 Yields	1963 Yields	1958 to 1962 Yields
Grain Sorghum	104,000	69.0 bu./acre	67.0 bu./acre	58.7 bu./acre
Forage Sorghum	33,000	16.0 tons/acre	15.5 tons/acre	15.2 tons/acre
Sorghum X Sudangrass Hybrids & Sudangrasses	25,000	----	----	----

1/ Figures obtained from official USDA acreage releases and Agricultural Extension Service estimates.

Sorghum research was conducted predominately at five locations in Arizona in 1964. The sites had been previously selected for their environmental differences which are due chiefly to altitude. Various meterological data concerning these locations are given in Table 2. Evaluation at these locations of sorghum products sold in Arizona is done to guide the Arizona grower in selecting something better suited to his particular area. Formal crop recommendations are given in a Crop Recommendation Bulletin published periodically by the University of Arizona Experiment Station. The purpose of this report is to give more detailed information on particular items.

Table 2

Meteorological Data From Sites of 1964 Experiments

Location	Elevation in feet above sea level	Average Dates of Killing Frosts		Average Length of growing season (Days)
		Last	First	
Yuma Valley Exp. Farm	150	Feb. 20	Nov. 26	280
Mesa Exp. Farm	1100	Feb. 25	Nov. 25	273
Marana Exp. Farm 1/	2000	Mar. 1	Nov. 15	260
Safford Exp. Farm	2900	Apr. 9	Nov. 2	207
Chino Valley	4700	May 11	Oct. 18	160
Snowflake	5600	May 24	Oct. 3	132

1/ Data estimated from nearby weather stations.

GRAIN SORGHUM

The following experiments were conducted to evaluate grain sorghum hybrids offered for sale in Arizona. It was not possible to yield test all 54 entries received at all 5 experimental sites in the state. Observational data were obtained at these 5 locations which gave us a good idea of general adaptation regarding maturity. Yield data were obtained at one central location (Marana).

Tables 3, 4, 5, and 6 present yield and other pertinent agronomic data on many of the commercial grain sorghums offered for sale in Arizona.

Yields are shown as percentages of RS 610, a common check hybrid which is now generally grown throughout the state. The reason for presenting data in this manner is that yields are relative. One grower may produce twice the yield of that of another grower due to differences in management, but if the yield potential of a new hybrid is 10 per cent more than a known standard, this may be found by either grower. Most growers are acquainted with the performance of RS 610 on his particular farm.

In 1964 plots used were 2 or 4 beds each 50' long. The seeding rate was approximately 8 lbs. per acre, such that the expected plant population was 80,000 per acre. Nitrogen fertilizer was used at an average favorable for grain sorghum production.

Table 3.

Agronomic Data From a Single Harvest Grain Sorghum Production Trial of Commercial Entries at Marana, Arizona. 1964 [1]

Entry	Yield [2] in Bu./Acre	Yield in lbs/acre	Yield in % of RS-610 [3]	Days to 50% Bloom	Height in Inches	Head Exsertion in Inches	% Lodging
NK-310	132.5	7422	143	77	57	2	
ASG DOUBLE T	124.3	6965	135	68	56	5	
ADVANCE 14	124.1	6952	134	62	56	6	
NK-283	123.7	6926	134	83	54	3	
PIONEER 820	121.1	6782	131	66	54	7	5
PM-PAWNEE	118.5	6639	128	52	53	6	9
ASG AMAK R-12	118.1	6612	128	62	56	6	5
LINDSEY 788	116.9	6547	127	68	56	5	
DEKALB C45	116.4	6521	126	58	48	4	
ASG CCASTAL	116.4	6521	126	63	52	6	
DEKALB E57	116.2	6508	126	64	54	8	
FRONTIER 401	116.0	6495	126	61	49	4	
NK 135	114.8	6430	124	52	58	8	15
FRONTIER 413	114.3	6403	124	69	53	3	
ASG RED RAIDER A	113.6	6364	123	60	49	6	
DEKALB F64	113.4	6351	123	66	66	9	
NK 222	113.4	6338	123	58	46	4	
ASG RAIDER B	112.9	6324	122	62	51	7	
DEKALB C-44A	112.0	6273	121	58	49	6	6
PM-APACHE	112.0	6270	121	68	54	6	
LINDSEY 744	111.3	6233	120	60	51	7	
NK 210	110.8	6207	120	59	54	7	3
PIONEER 846	110.6	6194	120	62	53	6	
NK 227	110.4	6181	119	58	50	7	

Table 3.--Continued

Entry	Yield [2] in Bu./Acre	Yield in lbs/acre	Yield in % of RS-610 [3]	Days to 50% Bloom	Height in Inches	Head Exsertion in Inches	% Lodging
AMAK R-10	109.9	6155	119	59	50	7	
NK 140	109.9	6155	119	56	50	5	9
PAG 665	109.4	6129	118	68	58	6	
FRONTIER 400C	109.0	6103	118	59	53	8	
DEKALB C-44B	108.5	6077	117	58	52	6	4
ADVANCE 91E	108.3	6064	117	68	50	3	
LINDSEY 755	108.3	6064	117	64	56	7	4
PAG 430	108.3	6064	117	59	50	6	
DEKALB S-33	107.1	5998	116	52	46	6	5
FRONTIER 400B	106.6	5972	115	59	52	7	
PAG 515	106.6	5972	115	64	56	8	5
LINDSEY 551	106.2	5945	115	62	45	4	
ASG ROCKET A	105.2	5894	114	58	46	5	
DEKALB F65	105.2	5894	114	67	50	4	
PAG 494	105.0	5881	114	62	56	7	
DEKALB B-32	103.1	5776	112	56	49	4	
PM-KIOWA	102.9	5763	111	62	53	5	
DEKALB E 56A	102.7	5750	111	61	53	7	11
DEKALB F-62A	102.4	5737	111	62	54	6	10
PM-COMANCHE	102.0	5711	110	60	50	8	
PAG 428	101.7	5698	110	56	54	8	9
LINDSEY 531	100.6	5632	109	60	43	5	
DEKALB S40	98.9	5541	107	59	42	4	
PAG 304	98.9	5541	107	54	39	6	
PM-UTE	98.0	5489	106	61	49	3	

Table 3.--Continued

Entry	Yield 2/ in Bu./Acre	Yield in lbs/acre	Yield in % of RS-610 3/	Days to 50% Bloom	Height in Inches	Head Exsertion in Inches	% Lodging
DEKALB RS 610	97.3	5449	---	60	53	7	
DEKALB F-61	97.1	5436	105	67	52	4	
REGULAR HEGARI	95.9	5377	104	76	74	2	8
DEKALB F-63	94.7	5306	102	66	57	8	8
RS 610	87.5	4900	---	60	54	6	
PAG 275	85.9	4809	93	52	50	7	25
NK 125	84.7	4744	92	52	49	7	13

1/ Planted June 6, 1964; Harvested Dec. 17, 1964.

2/ Plots = 2 rows (40 inches) x 50 feet; 4 replications.

3/ An average yield for RS 610 was computed from two RS 610 entries for comparison with all other entries.

Table 4

Yield and Other Agronomic Data From a Single Harvest USDA Regional Uniform Grain Sorghum Production Trial at Marana, Arizona. 1964[1/]

Entry	Yield[2/] in Bu./Acre	Yield in lbs/acre	Yield in % of RS-610	Days to 50% Bloom	Height in Inches	Head Exsertion in Inches	% Lodging
OK 5917	113.3	6345	112	67	55	7	0
RS 671	108.7	6087	107	65	53	8	0
OK 627	106.3	5953	105	66	51	4	0
GA 615	104.0	5824	103	63	58	5	8
OK 5915	103.0	5768	102	62	52	9	0
OK 6140	102.0	5712	101	62	46	7	0
RS 610	101.3	5673	100	60	54	9	0
RS 625	99.3	5561	98	59	50	13	3
OK 5932	98.7	5527	97	65	48	8	0
IV 591399	97.0	5432	96	69	56	0	17
RS 619	96.3	5393	95	62	50	8	0
OK 6142	95.7	5359	94	64	44	3	0
58 MH 107	95.3	5337	94	71	50	3	0
RS 626	94.7	5303	93	60	53	10	0
RS 640	94.3	5281	93	64	44	5	0
CO 604	93.7	5247	92	58	62	12	0
OK 5927	93.0	5208	92	61	46	5	0
RS 622	91.0	5096	90	64	48	10	0
RS 624	90.3	5057	89	62	48	5	0
63 NMH 11	89.7	5023	88	61	47	6	0
RS 608	86.0	4816	85	59	52	10	3
CO 606	83.0	4648	82	60	64	12	5
NB 504	81.7	4575	81	59	55	13	7
NB 505	81.7	4575	81	56	51	13	15
61 NMH	81.7	4575	81	63	50	10	0
MARTIN	79.7	4463	79	63	50	10	0
OK 6176	75.7	4239	75	59	46	11	3
61 NMH1	73.3	4105	72	64	52	6	0

1/ Planted June 6, 1964; Harvested December 10, 1964.

2/ Plots = 1 row (40 inches) x 50 feet; 3 replications.

Table 5

Various Agronomic Data on Grain Sorghums Grown at Five Locations in Arizona in 1964.

Entry	Days to Boot				Days to 50% Bloom					Height to Top of Head in Inches			
	Yuma	Marana	Chino Valley	Snowflake	Yuma	Marana	Safford	Chino Valley	Snowflake	Yuma	Marana	Safford	Snowflake
ADVANCE 14	49	53	--	88	56	63	73	97	103	50	56	45	56
ADVANCE 91E	49	60	93	98	57	69	84	--	111	47	49	42	45
ASG ROCKET A	44	52	78	88	51	59	73	89	98	46	47	33	53
ASG AMAK R10	46	53	--	87	52	60	70	96	99	48	51	39	56
ASG RED RAIDER A	45	54	96	87	51	61	77	--	101	44	50	39	47
ASG COASTAL	46	57	98	88	51	64	80	--	101	48	54	42	51
ASG AMAK R-12	46	54	--	89	53	63	78	94	102	50	57	42	54
ASG RAIDER B	44	53	90	96	51	62	78	100	107	48	54	42	42
ASG DOUBLE T	51	59	91	90	58	69	80	101	103	50	56	42	56
DEKALB S-40	43	52	78	85	51	60	80	89	97	40	44	33	42
DEKALB S-33	39	--	72	82	45	52	63	81	88	40	47	36	49
DEKALB B-32	39	49	77	83	46	58	63	89	94	45	48	40	45
DEKALB C44 A	43	51	84	87	51	59	66	94	102	51	50	39	50
DEKALB C45	41	49	81	86	49	58	68	90	102	50	51	35	45
DEKALB C44 B	42	52	85	92	49	60	70	89	107	56	53	45	48
DEKALB E-57	49	57	--	98	56	66	70	94	109	55	55	48	47
DEKALB RS 610	44	54	83	86	51	62	70	92	96	56	54	42	56
DEKALB E-56A	46	56	81	91	51	61	70	94	105	58	55	42	55
DEKALB F65	46	59	89	88	53	68	75	98	97	54	51	39	50
DEKALB F62A	44	55	--	84	51	62	73	94	97	58	56	48	55
DEKALB F 61	49	59	91	96	56	67	80	--	109	53	55	45	51
DEKALB F 64	49	58	89	98	56	67	78	102	108	62	67	55	59
DEKALB F 63	49	59	--	93	56	67	73	96	106	48	58	54	58
FRONTIER 400 B	45	53	77	87	51	60	70	89	99	50	55	45	60
FRONTIER 400 C	46	53	78	88	52	60	70	90	100	52	59	45	58
FRONTIER 401	45	55	--	91	51	62	75	94	99	50	52	42	38
FRONTIER 413	51	63	--	92	58	70	94	95	102	50	52	48	59
LINDSEY 531	45	55	79	87	51	62	70	89	100	43	42	38	42
LINDSEY 744	44	53	80	89	51	59	70	94	103	58	52	39	57
LINDSEY 551	45	54	--	90	51	62	70	94	101	47	46	39	51

Table 5 (Continued)

Entry	Days to Boot				Days to 50% Bloom					Height to Top of Head in Inches			
	Yuma	Marana	Chino Valley	Snowflake	Yuma	Marana	Safford	Chino Valley	Snowflake	Yuma	Marana	Safford	Snowflake
LINDSEY 755	46	55	--	90	52	63	73	93	99	58	57	42	60
LINDSEY 788	49	61	--	93	58	69	73	95	102	56	57	45	61
NK 125	39	--	76	82	43	51	60	84	91	48	50	42	55
NK 135	38	--	74	77	45	52	60	81	86	58	61	49	61
NK 140	41	--	77	83	49	55	67	87	96	53	50	40	53
NK 210	46	53	81	86	52	59	72	88	99	54	56	42	60
NK 222	43	49	--	95	49	58	70	95	106	49	48	40	40
NK 227	43	51	--	89	51	59	70	96	103	55	51	42	45
NK 283	70	74	80	88	77	82	89	91	101	61	57	51	47
NK 310	65	69	82	90	74	76	88	89	102	64	60	57	53
PAG 275	38	--	--	75	45	51	60	77	88	57	53	42	47
PAG 304	39	--	76	89	45	52	63	88	97	41	42	30	36
PAG 428	41	--	80	91	49	53	66	95	102	58	57	46	49
PAG 430	46	52	83	87	51	59	70	94	99	51	50	39	57
PAG 494	46	55	97	87	53	62	70	--	98	45	58	45	51
PAG 515	49	55	--	93	56	62	78	100	107	49	56	45	58
PAG 665	51	60	--	88	42	68	78	97	101	45	56	45	57
PM PAWANEE	39	--	--	78	46	51	61	87	89	48	57	42	60
PM COMANCHE	46	48	86	85	52	57	70	94	98	47	50	39	48
PM UTE	46	52	84	86	52	61	70	92	99	45	49	39	50
PM KIOWA	46	53	--	89	53	62	70	95	102	53	50	42	56
PM APACHE	49	61	98	90	56	66	80	--	101	52	52	47	56
PIONEER 846	46	53	--	91	53	62	70	98	108	56	54	47	46
PIONEER 820	49	57	101	100	56	65	78	--	118	56	56	47	45

Table 6

Various Agronomic Data on Grain Sorghums Grown at Five Locations in Arizona in 1964.

Entry	Head Exsertion in Inches		Bird Damage %	Days to Mature Grain
	Yuma	Marana	Yuma	Yuma
ADVANCE 14	6	6	5	95
ADVANCE 91 E	5	5	5	99
ASG ROCKET A	7	6	30	86
ASG AMAK R10	8	7	35	91
ASG RED RAIDER A	8	8	15	87
ASG COASTAL	6	10	25	87
ASG AMAK R-12	6	10	20	93
ASG RAIDER B	8	6	20	90
ASG DOUBLE T	5	6	30	99
DEKALB S-40	5	5	5	86
DEKALB S-33	5	6	60	86
DEKALB B-32	8	1	50	83
DEKALB C 44 A	9	8	40	91
DEKALB C 45	7	4	10	86
DEKALB C 44 B	9	5	30	90
DEKALB E-57	8	8	20	98
DEKALB RS 610	7	9	50	90
DEKALB E-56 A	7	8	60	90
DEKALB F 65	7	3	35	97
DEKALB F 62 A	9	5	65	90
DEKALB F 61	6	11	25	99
DEKALB F 64	9	6	40	98
DEKALB F 63	5	10	20	99
FRONTIER 400 B	7	12	60	91
FRONTIER 400 C	6	8	50	93
FRONTIER 401	6	3	20	93
FRONTIER 413	5	4	10	97
LINDSEY 531	6	3	20	94
LINDSEY 744	8	6	90	91
LINDSEY 551	7	5	35	94

Table 6 (Continued)

Entry	Head Exsertion in Inches		Bird Damage %	Days to Mature Grain
	Yuma	Marana	Yuma	Yuma
LINDSEY 755	8	6	85	93
LINDSEY 788	5	8	30	100
NK 125	8	9	35	73
NK 135	8	12	65	73
NK 140	8	10	60	73
NK 210	8	7	60	95
NK 222	8	5	40	93
NK 227	8	6	60	87
NK 283	8	5	50	93
NK 310	7	5	65	93
PAG 275	7	12	40	83
PAG 304	8	6	20	83
PAG 428	9	7	98	86
PAG 430	8	6	60	93
PAG 494	7	10	40	97
PAG 515	6	6	30	97
PAG 665	6	5	10	104
PM PAWANEE	8	11	20	86
PM COMANCHE	7	7	20	94
PM UTE	5	1	15	93
PM KIOWA	5	3	20	95
PM APACHE	5	6	15	98
PIONEER 846	8	3	35	95
PIONEER 820	7	5	20	98

FORAGE SORGHUM AND SUDANGRASS

Production trials of forage sorghums for silage purposes were conducted at two locations in Arizona in 1964 (Yuma and Mesa). The yields and other pertinent agronomic information on forage sorghums are presented in Tables 7, 8, 9, 10, 11, and 12.

Adapted hybrids will produce more dry matter per acre than adapted varieties. Lodging is a serious problem and seems to vary in degree from one area to another. Some high yielding hybrids and varieties tend to lodge considerably, hence they would not be recommended under conditions tending to produce lodging. Lower elevations (higher temperatures) have long growing seasons, tending to produce much growth which consequently tends to lodge. Under these conditions perhaps the selection of earlier maturing sorghums, those shorter in height (either hybrid or variety) and judicious rate of fertilizer application might all help to reduce lodging. It may be necessary to exchange some yield for standing ability in the field.

These results are from test plots with border rows replicated four times and seeded at about 10 pounds per acre. Only the center row or rows were harvested at the soft to hard dough stage of development.

Yield and other agronomic data on five commercial sudangrass type hybrids are given in Table 13. Yield results are given in tons per acre of oven-dry plant material.

Table 7

Agronomic Data From a Single Harvest of Forage Sorghums at Yuma, Arizona. 1964. [1]

Entry	Yield in Tons/Acre @30 Per Cent Dry Matter [2]		Yield in Per Cent of Low Entry	Average Production in Ton/Acre/Day	No. of Days From Planting to Harvest	Plant Height in Inches	Per Cent Lodging	Per Cent Dry Matter at Harvest
PM AZTEC	36.7	a [3]	158	.316	116	135	95	25.9
LINDSEY 101 F	36.1	ab	156	.311	116	105	91	25.9
PAG SI-CHOW 2	31.6	bc	136	.332	95	111	8	26.5
PM CROP GUARD	31.2	c	134	.367	85	105	43	28.4
PAG SI-CHOW 1	30.0	cd	129	.353	85	101	7	28.6
ASG TITAN	28.9	cd	124	.249	116	119	68	23.8
PM 3 LITTLE INDIANS	28.7	cd	124	.338	85	120	10	28.4
ASG DAIRY D	25.2	de	109	.296	85	92	24	27.4
REGULAR HEGARI	23.2	e	100	.244	95	77	6	26.5

1/ Planted in moist soil on June 22, 1964.

2/ Plots = 4 rows (40 inches) x 15', 4 replications. Harvested 6' from each of 2 center rows.

3/ All entries with the same letter are to be considered not different in yield at the 5 per cent level of probability.

Table 8

Average Data for 5 Years on Single Harvest of
Forage Sorghums Cut for Silage at Soft to Hard Dough Stage
of Seed Development. Yuma Experiment Farm. 1959, 1960, 1961, 1962 and 1964.

Entry	Yield Tons/Acre @ 30% Dry Matter	Yield in Per Cent of Regular Hegari	Average Production in Tons/Acre/Day	Number of Days to Harvest	Plant Height in Inches	Per Cent Dry Matter at Harvest
Lindsey 101 F	30.0	152	.254	118	96	27.5
Regular Hegari	19.7	100	.214	92	75	26.3

Table 9

Agronomic Data From a Single Harvest of Forage Sorghums at Mesa, Arizona. 1964 [1]

	Yield in Tons/Acre at 30% Dry Matter [2]		Yield in Per Cent of Low Entry	Production in Tons/Acre/Day	Days to Harvest	Height in Inches at Harvest	Per Cent Lodging at Harvest	Per Cent Dry Matter at Harvest	Days to 50% Bloom
LINDSEY 101 F	42.8 [3]	a	149	.396	108	72	0	43	74
ASG DAIRY D	38.2	ab	133	.354	108	91	70	38	84
PM CROP GUARD	37.3	ab	130	.324	115	99	50	34	87
PM 3 LITTLE INDIANS	36.7	ab	127	.319	115	94	0	45	75
REGULAR HEGARI	33.0	ab	115	.306	108	56	0	55	69
PM AZTEC	32.5	bc	113	.283	115	91	32	32	77
PAG SI-CHOW 1	32.1	bc	111	.279	115	89	59	36	86
ASG TITAN	31.0	bc	108	.270	115	78	80	29	94
PAG SI-CHOW 2	28.8	c	100	.250	115	105	84	27	94

1/ Planted in moist soil on May 12, 1964.

2/ Plots = 3 rows (36 inches) x 15', 4 replications.

3/ All entries with the same letter are to be considered not different yield at the 5 per cent level of probability.

Table 10

Average Data for 5 Years on Single Harvest of
Forage Sorghums Cut for Silage at Soft to Hard Dough Stage
of Seed Development. Mesa Experiment Farm. 1959, 1960, 1962, 1963, and 1964.

Entry	Yield Tons/Acre @ 30% Dry Matter	Yield in Per Cent of Regular Hegari	Average Production in Tons/Acre/Day	Number of Days to Harvest	Plant Height in Inches	Per Cent Dry Matter at Harvest
Lindsey 101 F	31.8	129	.282	113	88	30.8
Regular Hegari	24.7	100	.235	105	64	36.0

Table 11

Various Agronomic Data on Forage Sorghums and Sorghum X Sudangrass Hybrids Grown at Five Locations in Arizona in 1964

Entry	Days to 50% Boot				Days to 50% Bloom					Days to Soft Dough to Hard Dough	
	Yuma	Marana	Chino Valley	Snowflake	Yuma	Marana	Safford	Chino Valley	Snowflake	Yuma	Safford
FORAGE SORGHUM											
ASG TITAN	83	77	90	89	93	87	104	98	99	112	116
ASG DAIRY D	56	63	94	99	60	66	85	101	112	79	106
DEKALB FS-22	62	65	102	--	65	74	86	--	122	80	106
DEKALB FS-1 A	67	72	84	90	76	85	84	89	102	95	106
FRONTIER S-214	77	66	94	96	87	76	98	--	106	111	112
LINDSEY 92 F	51	59	--	95	58	66	73	96	107	74	95
LINDSEY 101 F	80	76	--	92	87	86	95	101	103	109	109
LINDSEY 115 F	83	81	--	90	93	89	95	98	99	114	109
NK 145	38	--	75	83	44	54	94	84	93	60	79
NK 300	78	74	81	83	83	86	89	88	95	104	110
NK 330	78	79	--	94	86	87	98	91	106	109	113
PAG SI-CHOW 1	53	60	97	97	62	69	85	--	109	80	106
PAG SI-CHOW 2	60	68	100	--	67	76	98	--	124	83	116
PM AZTEC	79	76	--	83	90	86	98	93	96	111	116
PM CROP GUARD	56	62	102	101	62	75	86	--	120	81	106
PM THREE LITTLE INDIANS	53	58	--	--	60	67	78	94	--	81	99
SORGHUM X SUDAN											
ASG-GRAZER	53	61	83	83	60	67	74	89	100	79	98
ASG-H 6160	53	61	84	84	59	67	74	90	98	77	98
DEKALB SX 11	53	58	74	83	58	63	74	87	95	80	97
DEKALB SX 12	56	62	86	85	60	68	78	92	98	77	100
FRONTIER-HIDAN 37	49	55	84	81	56	62	72	90	95	70	94
LINDSEY-77F	52	54	83	83	60	62	71	89	96	77	94
NK-SORDAN	56	56	--	89	62	66	75	96	104	80	96
PAG-SU-CHOW 34	62	60	--	97	67	69	78	99	109	83	--
PAG-SU-CHOW 35	53	62	--	89	60	67	78	98	106	79	101
PM SWEET SIOUX	58	60	84	82	60	67	78	90	96	77	101

Table 11 (Continued)

Entry	Days to 50% Boot				Days to 50% Bloom					Days to Soft Dough to Hard Dough	
	Yuma	Marana	Chino Valley	Snowflake	Yuma	Marana	Safford	Chino Valley	Snowflake	Yuma	Safford
SUDANGRASS											
NK Trudan I	35	--	75	77	43	53	67	82	85	57	87
SUDAN #23	62	60	78	69	67	69	88	86	80	81	102

Table 12

Various Agronomic Data on Forage Sorghums and Sorghum X Sudangrass Hybrids Grown at Five Locations in Arizona in 1964.

Entry	Height				Lodging % at		Head Exsertion	Bird Damage	Adaptation For Forage	
	Yuma	Marana	Safford	Snowflake	Soft Dough Yuma	Hard Dough Snowflake	Marana	Yuma	Yuma	Snowflake
FORAGE SORGHUM										
ASG TITAN	112	111	96	75	65	5	3	60	Ave.	Good
ASG DAIRY D	86	89	87	85	0	0	4	0	Good	Good
DEKALB FS-22	96	110	90	74	0	0	5	2	Good	Ave.
DEKALB FS 1A	92	92	72	65	10	5	4	80	Good	Ave.
FRONTIER S-214	116	112	102	73	65	5	6	20	Ave.	Good
LINDSEY 92 F	88	94	90	84	50	5	5	0	Ave.	Good
LINDSEY 101 F	100	107	90	72	98	15	3	10	Ave.	Ave.
LINDSEY 115 F	116	110	96	83	95	10	6	20	Ave.	Ave.
NK 145	77	88	63	78	25	20	4	0	Good	Ave.
NK 300	90	88	78	64	85	5	4	15	Ave.	Ave.
NK 330	102	105	84	71	85	5	1	15	Ave.	Ave.
PAG SI-CHOW 1	96	90	87	80	1	5	3	10	Good	Good
PAG SI-CHOW 2	90	118	96-126	87	3	15	8	95	Good	Ave.
PM AZTEC	120	124	114	78	85	0	1	25	Ave.	Ave.
PM CROP GUARD	96	107	84	88	75	5	6	0	Ave.	Ave.
PM THREE LITTLE INDIANS	110	106	108	65-110	5	5	5	5	Good	Ave.
SORGHUM X SUDAN										
ASG-GRAZER	110	105	102	84	20	35	10	0	Good	Ave.
ASG-H 6160	110	119	96	83	60	55	12	0	Ave.	Ave.
DEKALB SX 11	105	107	102	105	15	65	8	0	Good	Ave.
DEKALB SX 12	130	105	114	115	5	10	6	0	Good	Good
FRONTIER-HIDAN 37	100	101	102	100	15	25	3	0	Good	Ave.
LINDSEY-77 F	96	102	96	95	25	70	4	0	Good	Ave.
NK-SORDAN	110	98	102	105	10	25	3	0	Good	Good
PAG-SU-CHOW 34	102	91	108	115	15	20	4	0	Good	Good
PAG-SU-CHOW 35	102	100	102	120	8	15	3	0	Good	Good
PM SWEET SIOUX	116	105	108	110	5	5	4	0	Good	Ave.

Table 12 (Continued)

Entry	Height				Lodging % at Soft Dough-Hard Dough		Head Exsertion	Bird Damage	Adaptation For Forage	
	Yuma	Marana	Safford	Snowflake	Yuma	Snowflake	Marana	Yuma	Yuma	Snowflake
SUDANGRASS										
NK TRUDAN I	108	90	102	95	20	15	0	0	Good	Good
SUDAN #23	120	108	102	70	15	40	0	0	Good	Ave.

Table 13
Mean Agronomic Performance of Sudangrass Type Hybrids
Cut Repeatedly to Simulate Grazing[1] Mesa, 1964[2]

Entry	1st Cutting June 20, 1964 Yield T./Acre[3]	% Dry Matter	Height in Inches	2nd Cutting July 9, 1964 Yield T./Acre	% Dry Matter	Height in Inches	3rd Cutting August 6, 1964 Yield T./Acre	% Dry Matter	Height in Inches
NK TRUDAN I	.81	23	26	1.05	19	31	1.75	15	61
ASG GRAZER	1.06	21	26	1.01	17	27	2.32	15	63
LINDSEY-77 F	1.16	22	31	1.00	17	28	1.99	14	64
DK SX-11	.99	23	29	.98	18	27	1.80	14	57
SORDAN	.87	23	26	1.06	18	28	1.65	15	55

Entry	4th Cutting September 3, 1964 Yield T./Acre	% Dry Matter	Height in Inches	5th Cutting September 30, 1964 Yield T./Acre	% Dry Matter	Height in Inches	6th Cutting November 4, 1964 Yield T./Acre	% Dry Matter	Height in Inches	Total Annual Yield Tons/Acre Dry Matter
NK TRUDAN I	1.06	17	31	.55	16	38	.55	20	25	5.77
ASG GRAZER	.61	16	23	.43	16	36	.27	18	22	5.70
LINDSEY-77 F	.65	17	26	.29	16	35	.30	19	23	5.39
DK SX-11	.72	16	23	.41	15	35	.28	17	24	5.18
SORDAN	.54	16	25	.23	15	35	.24	18	19	4.59

1/ Cut at approximately 24 inches in height unless weather interfered with harvest.

2/ Planted May 12, 1964 in 10 inch drill rows.

3/ Yield in tons of dry matter per acre on an oven-dry basis.